



Australian Government

10/535 405
PCT/AU2003/001565

Patent Office
Canberra

I, JANENE PEISKER, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2002952900 for a patent by VSL PRESTRESSING (AUST) PTY LTD as filed on 25 November 2002.

I further certify that the name of the applicant has been amended to VSL AUSTRALIA PTY LTD pursuant to the provisions of Section 104 of the Patents Act 1990.



WITNESS my hand this
Twenty-ninth day of April 2005

JANENE PEISKER
TEAM LEADER EXAMINATION
SUPPORT AND SALES

BEST AVAILABLE COPY

Our Ref: 7756590

P/00/009
Regulation 3:2

AUSTRALIA

Patents Act 1990

PROVISIONAL SPECIFICATION

Applicant(s): VSL Prestressing (Aust) Pty Ltd
6 Pioneer Avenue
Thornleigh New South Wales 2120
Australia

Address for Service: DAVIES COLLISON CAVE
Patent & Trade Mark Attorneys
Level 10, 10 Barrack Street
SYDNEY NSW 2000

Invention Title: Protective device

The invention is described in the following statement:

BEST AVAILABLE COPY
5014

- 1 -

PROTECTIVE DEVICE

The present invention relates to protective devices suitable for use with elongated articles such as for example, cables including stay cables for bridges, steel hangers for
5 bridges, telecommunication cables, power cables and piles supporting structures.

Articles of the type described exemplified above can deteriorate significantly if they are subject to adverse conditions such as fire, explosion, impact or environmental conditions.

10

It is an object according to one aspect of the present invention to provide an improved protective device which can provide at least some protection against one or more of the aforementioned conditions.

15

It is an object according to another aspect of the present invention to provide an improved method of installing a protective device.

20

According to one aspect of the present invention there is provided a protective device for use in the protection of at least a portion of an elongated article, the protective device including a main body, first and second parts which are connectible together such that, in an assembled position the main body has a chamber therein and which is open at at least one end thereof, the first and second parts each having two longitudinal extending side edge portions respective side edge portions of the first part being adapted to cooperate with respective side edge portions of the second part to connect the two parts together in
25 the assembled position. When fitted at least a portion of the article to be protected is disposed within the chamber.

30

In one form, the main body may be in the form of a tubular member which can be open at one or both ends. The two parts are formed as separable sections of the tubular member, the side edge portions extending from one end of the tubular member to the other. The inner surface of the tubular member forms the inner side wall of the chamber.

BEST AVAILABLE COPY

- 2 -

In one form, the cooperating side edge portions of the first and second parts may be arranged to overlap when in the assembled position. The first and second parts may be partially circular when viewed in cross-section, the first part comprising a major segment
 5 of a circle and the second part forming a minor segment of a circle. The side edge portions of the first or second part may include a recessed section for receiving the side edge portion of the other part. It will be appreciated that the first and second parts may be of any other suitable cross-sectional shape. For example, in the assembled position, they may form a square, rectangle, hexagon or the like.

10

One of the ends of the main body may be belled for receiving the other end of an adjacent device.

Insulation may be provided on the internal surface of one or both parts of the main
 15 body. A locating element may be provided which projects from the inner wall of one of the two parts.

The first and second parts are connected together by relative movement in the axial direction so as to adopt the assembled position.

20

The main body may be formed from any suitable material. An example of a preferred type of material is DUCTAL™. DUCTAL is a cementitious material which is used in a wide variety of structural applications. Various forms of the material are the subject of Australian Patent Specifications Numbers 678271, 628198, 504723, 508716 and
 25 520633: The contents of these specifications is incorporated herein by of cross reference.

The device in its preferred form has several advantages. For example, it can provide for fire protection of the part being protected. It can also provide mechanical protection against impact and explosion, caused by vandalism, accident, terrorism and
 30 similar action. It requires little maintenance, is extremely durable and will never need replacing. Is easy to install. It can be dismantled and removed then reinstalled, if

BEST AVAILABLE COPY

- 3 -

required for the inspection of the structure or facility. It has concealed connections. It has a clean appearance, with no external projections.

In order to enable a clearer understanding of the invention, drawings illustrating
5 example embodiments are attached, and in those drawings:

Figure 1 is a schematic end view of a protective device according to a first embodiment in an installed position;

10 Figure 2 is a schematic side elevation of a series of protective devices in an installed position;

Figure 3 is a detail schematic partial view of a junction between adjacent devices;

15 Figure 4 is a similar view as Figure 1 of a second embodiment; and

Figure 5 is a similar view to Figure 3 of the second embodiment.

Referring to the drawings, there is shown a protective device 10 in an installed
20 position on a cable stay 50. The device 10 includes a main body 12 in the form of a tubular body having an internal chamber 14 therein, the tubular body being open at both ends. The main body 12 includes two parts 22 and 27 each having respective side edge portions 23 and 28 which are adapted to cooperate with one another to connect the two parts together in an assembled position. The two parts 22 and 27 are formed by segments
25 of circle, the first part being a major segment and the second part being a minor segment.

The side edge portions 23 of the first part are in essence a continuation of the side wall of the body although in the embodiment of Figure 2, a small recess 24 is provided in the inner wall surface 16 so as to form a locating shoulder 30. The side edge portions 28
30 of the second part include an inwardly stepped section 29 forming a recess 30 and shoulder 31. A locating flange 34 is provided on the inner wall surface 16 of the first part. It will

BEST AVAILABLE COPY

- 4 -

be appreciated that the connecting parts could be oppositely disposed so that the inner wall surface is smooth with the overlapping sections being on the outside of the outer wall surface.

5 In the second embodiment insulating material 38 is secured to the inner wall surface of the main body. An additional flange 39 is provided in the region of side edge portion of the second part.

 As best seen in Figures 3 and 5, one end of the main body has a bell end flange 41
10 thereon to enable fitted connection of adjacent devices. Figure 2 illustrates a number of devices fitted together on a cable stay 50.

 The two parts of the main body can be fitted together by sliding movement of the two parts relative to one another in the axial direction. To fit the device in position one
15 part is located in the stay. Thereafter the second part is positioned on the opposite side of the stay and then slid into the final interlocked position.

 Finally, it is to be understood that the inventive concept in any of its aspects can be incorporated in many different constructions so that the generality of the preceding
20 description is not to be superseded by the particularity of the attached drawings. Various alterations, modifications and/or additions may be incorporated into the various constructions and arrangements of parts without departing from the spirit or ambit of the invention.

25 Dated this 25th day of November, 2002
 VSL PRESTRESSING (AUST) PTY LTD
 By Its Patent Attorneys
 DAVIES COLLISON CAVE

BEST AVAILABLE COPY

FIGURE 1

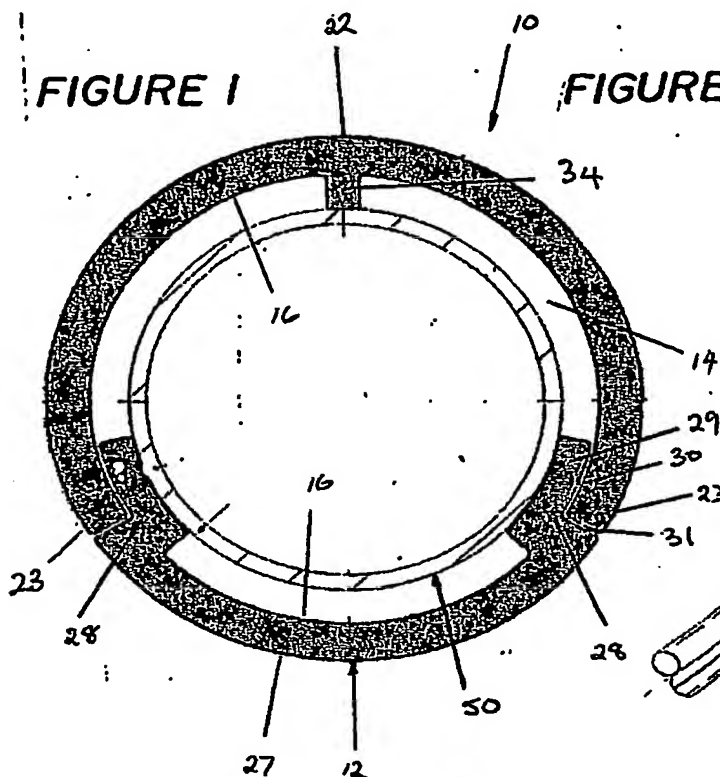


FIGURE 3

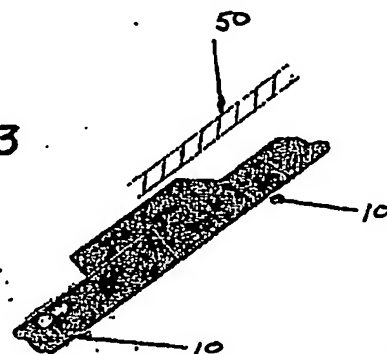


FIGURE 2

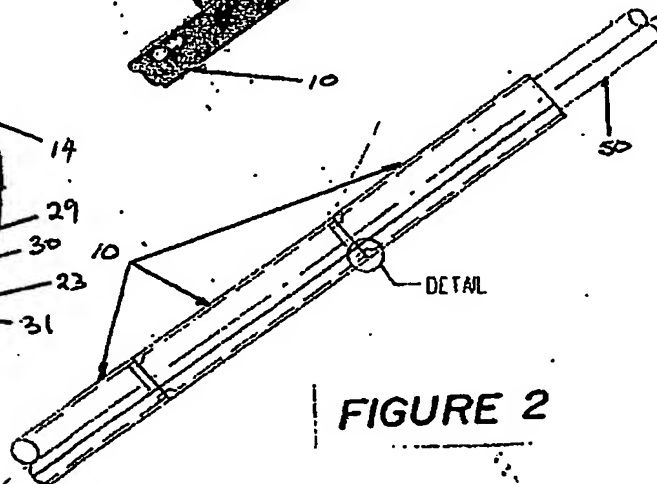


FIGURE 5

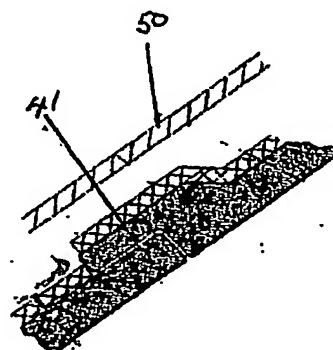
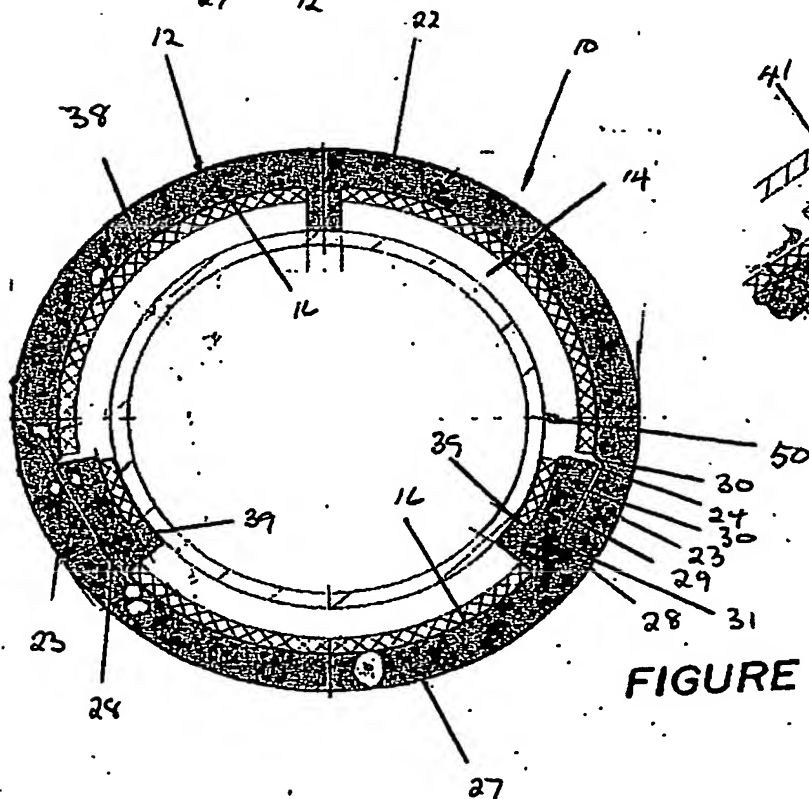


FIGURE 4



BEST AVAILABLE COPY

Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/AU03/001565

International filing date: 21 November 2003 (21.11.2003)

Document type: Certified copy of priority document

Document details: Country/Office: AU
Number: 2002952900
Filing date: 25 November 2002 (25.11.2002)

Date of receipt at the International Bureau: 10 May 2005 (10.05.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse